



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/047,613	01/15/2002	Karl Joachim Ebeling	M&N-IT 213	5759
24131	7590	06/04/2004	EXAMINER	
LERNER AND GREENBERG, PA P O BOX 2480 HOLLYWOOD, FL 33022-2480			RODRIGUEZ, ARMANDO	
			ART UNIT	PAPER NUMBER
			2828	

DATE MAILED: 06/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/047,613	EBELING ET AL.	
	Examiner	Art Unit	<i>AW</i>
	ARMANDO RODRIGUEZ	2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15-19, 23-29, 32, 33 and 36-39 is/are rejected.
- 7) ☒ Claim(s) 20-22, 30, 31, 34 and 35 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

Claims 15-39 are pending.

The 35 USC 112 second paragraph rejection of claims 1-39 has been withdrawn based on applicant's amendment and arguments filed on December 29, 2003.

Response to Arguments

Applicant's arguments, see pages 17-20, filed December 29, 2003, with respect to the rejection(s) of claim(s) 15-39 under 35 USC 112 second paragraph have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Anthony et al (PN 5,056,098).

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the current constrictor must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the relief structure must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the Fresnel lens must

Art Unit: 2828

be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the spacer layer must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 15-19,23-29,32,33,36-39 are rejected under 35 U.S.C. 102(b) as being anticipated by Anthony et al (PN 5,056,098).

Regarding claims 15,36-39,

Figure 1 illustrates a vertical cavity laser having a quantum well region (11), where the quantum well absorber is bleached by applying a drive current, as described in column 2 lines 55-68 and column 4 lines 62-68.

Regarding claim 16,

In column 2 lines 55-68 discloses material having first and second conductivity

Art Unit: 2828

type, which will form a pn junction and in column 3 lines 36-56 discloses materials from group III-V.

Regarding claim 17,

Figure 1 illustrates the quantum well absorber monolithically integrated.

Regarding claim 18,

The quantum well absorber (11) is disposed between mirrors (9) and (13), which forms a Fabry-Perot cavity as illustrated in figure 1.

Regarding claim 19,

Figure 1 illustrates pn junctions between (19) and (17) and (17) and (15), where the quantum absorber is located outside the pn junction formed by (17) and (15).

Regarding claim 23,25,28,29,

Figure 1 illustrates an isolation region (21), which restricts the current, as described in column 3 lines 19-22.

Regarding claims 24, 26,

Column 3 lines 19-22, discloses forming the isolation region (21) by ion Implantation which includes proton.

Regarding claim 27,

Column 4 lines 12-15 discloses a voltage between contacts 19 and 17, which form a pn junction.

Regarding claim 32,

Column 3 lines 36-45, discloses MBE layers having Si and Be within regions (3) and (7), which will serve as spacer layers.

Regarding claim 33,

Figure 1 illustrates the laser having an active region (5), a quantum

absorber region (11) and Column 3 lines 36-45, discloses MBE layers having Si and Be within regions (3) and (7), which will serve as spacer layers.

Allowable Subject Matter

Claims 20-22,30,31,34 and 35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

None of the cited references discloses the claimed laser diode having the recited limitations of dependent claims 20-22,30,31 and 34.

Regarding claims 20-22,

None of the cited references discloses the claimed laser diode having the recited layer thickness.

Regarding claims 30,31,

None of the cited references discloses the claimed laser diode having the recited mode selection.

Regarding claims 34,35,

None of the cited references discloses the claimed laser diode having the recited layer composition.

Conclusion

Art Unit: 2828

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ARMANDO RODRIGUEZ whose telephone number is 571-272-1952. The examiner can normally be reached on 9:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, DON WONG can be reached on 571-272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


ARMANDO RODRIGUEZ
Examiner
Art Unit 2828

Don Wong
Supervisor
Art Unit 2828

AR/DW


TAN HO
PRIMARY EXAMINER